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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/616,546

07/10/2003

Kadir A. Peker

MERL-1468

2803

7590 12/18/2006  
Patent Department  
Mitsubishi Electric Research Laboratories, Inc.  
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EXAMINER

WONG, ALLEN C

ART UNIT

PAPER NUMBER

2621

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/18/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/616,546

Applicant(s)

PEKER ET AL.

Examiner

Allen Wong

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/10/03, 8/4/03, 10/14/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Claim 5 cannot depend on itself, and thus, applicant needs to choose what claim 5 depends on.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 cannot depend on itself. Thus, claim 5 is improper and indefinite.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meng ("Scene Changes Detection in a MPEG Compressed Video Sequence" Proceedings of the SPIE, vol.2419, pg.14-25) in view of Rajagopalan (6,181,742).

Regarding claim 1, Meng discloses a method for playing frames of a video adaptively, comprising:

measuring a spatial frequency of pixel within frames of the video (see section 4.1.1 and fig.7, Meng discloses DCT coefficients are obtained to measure spatial frequency within frames);

measuring a temporal velocity of corresponding pixels between frames of the video (see section 4.1.1 and fig.7, Meng discloses motion vectors are obtained that measures the temporal activity of corresponding pixels between group of frames);

multiplying the spatial frequency by the temporal velocity to obtain a measure of visual complexity of the frames of the video (see section 5.2.1, formula 5 and fig.7, Meng discloses the temporal velocity that is represented by motion vectors comprising dimensions [x, y] in that the motion vectors are multiplied by the spatial frequency indicated by DCT coefficients b0, b1, b2 and b3, and the multiplied result is used to detect scene changes in the group of frames);

playing the frames of the video (section 9 discloses the frames of the video).

Meng does not specifically disclose playing the frames of the video at a speed that corresponds to the visual complexity. However, Rajagopalan teaches playing the frames of the video at a speed that corresponds to the visual complexity (col.10, ln.19-

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47; Rajagopalan discloses that the instantaneous coding rate  $R_i$  includes video complexity and that the instantaneous coding rate is the rate used for encoding and decoding video image data in that the complexities of I, P and B frames from a group of frames are taken into account to ascertain an optimal decoding and display rate of the video images). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Meng and Rajagopalan, as a whole, for accurately, efficiently encoding and decoding video image data in a high quality, optimal manner (Rajagopalan col.3, ln.19-24).

Note claims 10-19 have similar corresponding elements.

Regarding claim 2, Meng discloses wherein the video is compressed (section 4.1.1).

Regarding claim 3, Meng discloses wherein the spatial frequency is measured from discrete cosine transform coefficients of the pixels in the frames (see section 4.1.1 and fig.7, Meng discloses DCT coefficients are obtained to measure spatial frequency within frames), and the temporal velocity is measured from motion vectors of corresponding pixels between the frames (see section 4.1.1 and fig.7, Meng discloses motion vectors are obtained that measures the temporal activity of corresponding pixels between group of frames).

Regarding claims 4-7, Meng discloses the basic equation for DCT (see section 4.1.1 and fig.7, Meng discloses DCT coefficients are obtained to measure spatial frequency within frames).

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Regarding claims 8-9, Meng discloses measuring motion vectors and data from I frames and P frames (see section 4.1.1 and fig.7, Meng discloses motion vectors are obtained that measures the temporal activity of corresponding pixels between group of frames, and note I frame and P frame data are obtained).

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen Wong  
Primary Examiner  
Art Unit 2621

AW  
12/11/06